Enterohemorrhagic *Escherichia coli* (EHEC) & Hemolytic Uremic Syndrome (HUS)
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Enterohemorrhagic *Escherichia coli* (EHEC) & Hemolytic Uremic Syndrome (HUS)

Background[1,6]

Enterohemorrhagic *E. coli* (EHEC) strains, which include *E. coli* O157:H7, produce Shiga toxin that can cause diarrhea, which may range from mild and nonbloody to stools that are virtually all blood but contain no fecal leukocytes. Complications of EHEC infection can include hemolytic uremic syndrome (HUS) and thrombotic thrombocytopenic purpura (TTP). Outbreaks have occurred in nursing homes, child care centers, schools, and the community. Major sources of infection have been ground beef, unpasteurized milk and juice, sprouts, lettuce, and salami. Waterborne transmission occurs through swimming in contaminated lakes, pools, or drinking contaminated water. Since low numbers of organisms can cause infection, EHEC is easily transmitted from person to person and has been difficult to control in child care centers.

Overview[1,2]

For a more complete description of *E. coli* O157:H7, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM), "Diarrhea Caused By Enterohemorrhagic Strains" section.
- 2000 Red Book, Report of the Committee on Infectious Diseases, "*Escherichia coli* Diarrhea" section.

Case Definition[3]

Clinical description

An infection of variable severity characterized by diarrhea (often bloody) and abdominal cramps. Illness may be complicated by HUS *(See Section Below)* or TTP; asymptomatic infections also may occur.

Laboratory criteria for diagnosis

- Isolation of *Escherichia coli* O157:H7 from a specimen, **or**
- Isolation of Shiga toxin-producing *E. coli* O157:NM from a clinical specimen. Strains of *E. coli* O157:H7 that have lost the flagella "H" antigen become nonmotile and are designated "NM".

Case classification

Confirmed: A case that meets the laboratory criteria for diagnosis.

Probable:
- A case with isolation of *E. coli* O157 from a clinical specimen, pending confirmation of H7 or NM with Shiga toxin production, **or**
- A clinically compatible case that is epidemiologically linked to a confirmed or probable case, **or**
- Identification of Shiga toxin in a specimen from a clinically compatible case, **or**
- Definitive evidence of an elevated antibody titer to a known EHEC serotype from a clinically compatible case

Suspect: a case of postdiarrheal HUS or TTP (see HUS section below)

Information Needed for Investigation

- **Verify the diagnosis**. What laboratory tests were conducted and what were the results? Was *E. coli* O157:H7 confirmed? Was Shiga toxin testing done?
- **When investigating gastrointestinal illness of unknown etiology,** see the Outbreaks of Acute Gastroenteritis Section.
- **Establish the extent of illness**. Determine if household or other close contacts are, or have been ill, by contacting the health care provider, patient or family member.
- **Contact the Regional Communicable Disease Coordinator** if an outbreak is suspected, or if cases are in high-risk settings or jobs such as food handlers, child care, or health care.
- **Contact Bureau of Child Care** if cases are associated with a child care facility.

Case/Contact Follow Up And Control Measures

Determine the source of infection to prevent other cases:
- Does the case or a member of the case's household attend a child care center or nursery school?
- Does the case or a member of the case's household work as a foodhandler or healthcare provider?
- Identify symptomatic household and other close contacts and obtain stool specimens.
- Has the case traveled to an area where there is a known outbreak occurring?
- Has the case had contact with livestock or other animals?
- Has the case prepared or consumed undercooked hamburger?
- Have there been other cases linked by time, place or person?
- Does the case engage in sexual or other practices that would put them or others at increased risk?

Control Measures
See the Diarrhea, *E. coli* section of the Control of Communicable Diseases Manual (CCDM), "Control of patient, contacts and the immediate environment".

See the *Escherichia coli* Diarrhea section of the 2000 Red Book.

General:
- Infected persons must be made aware of the importance of good handwashing with soap and water after defecation or handling diapers or feces. (1,2)
- Cases and ill contacts of EHEC/*E. coli* O157:H7 patients should be excluded from foodhandling and the care of children or patients until diarrhea ceases and 2 successive negative stool cultures are obtained. (1,5)

Food Handlers:
- Cases and ill contacts of EHEC/*E. coli* O157:H7 patients should be excluded from food handling until 2 successive negative stool cultures are obtained. (1,5)
- When a food handler is diagnosed with EHEC/*E. coli* O157:H7, contact the Regional Communicable Disease Coordinator *immediately*.

Child Care:
- When EHEC/*E. coli* O157:H7 infection is identified in a child care attendee or staff member, stool specimens from other symptomatic attendees and staff members should be cultured. Because of the extremely small infective dose, child care staff who are ill should not provide child care until 2 stool cultures collected 24 hours apart are negative for *E. coli* O157:H7. (1)
- Ill children should not be permitted to reenter the child care center until diarrhea has stopped and 2 stool cultures are negative for *E. coli* O157:H7. (2) Stool specimens from household contacts who have diarrhea also should be cultured. (1)
- When an EHEC/*E. coli* O157:H7 case is identified in a child care facility contact the Regional Communicable Disease Coordinator *immediately*.
- The Bureau of Child Care should be informed when cases are associated with a child care facility

Laboratory Procedures

Enteric specimens:
Collect clinical specimens in Cary-Blair media using the Enteric Specimen collection kit supplied by the State Public Health Laboratory (SPHL). Specimens should be shipped to the SPHL along with freeze pillows that have been frozen for at least 24 hours. The only clinical specimen the SPHL will test for *E.coli* is a stool sample. The SPHL will identify *E.coli*

O157:H7 from cultures submitted by other laboratories. For epidemiological purposes, the organism should be further characterized by the SPHL. The SPHL does this testing at no charge to the submitter.

Environmental specimens:
The SPHL can perform testing on food and other specimens that are linked to clinical specimens. Food should be refrigerated, *but not frozen*. Contact the Environmental Microbiology Section for guidance prior to collecting and submitting specimens.

Reporting Requirements

Escherichia coli O157:H7 and other Enterohemorrhagic *E. coli*, shiga toxin + (non-O157:H7) are Category II diseases and shall be reported to the local health authority or the Missouri Department of Health and Senior Services within three (3) days of suspected or confirmed diagnosis.

1. For confirmed and probable cases, complete a "Disease Case Report" (CD-1), and a "Record of Investigation of Enteric Infection" (CD-2C) revised 6/02.
2. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
3. Send the completed secondary investigation form(s) to the Regional Health Office.
4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).
5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.
6. If other diarrhea causing *E. coli* (EPEC, ETEC, EIEC or EaggEC) are reported as part of a cluster of two or more cases, contact the Regional Communicable Disease Coordinator.

References

1. Chin, James, ed. "Diarrhea, *E. coli*." Control of Communicable Diseases Manual, 17th ed. Washington, D.C.: American Public Health Association, 2000: 155-158.
2. American Academy of Pediatrics. "*Escherichia coli* Diarrhea." 2000 Red Book: Report of the Committee on Infectious Diseases. 25th Ed. Elk Grove Village, IL. 2000: 108, 243-247.
3. Centers for Disease Control. Nationally Notifiable Infectious Diseases, United States 2000. http://www.cdc.gov/epo/dphsi/casedef/escherichia_coli_current.htm (11 April 2003)
4. Donowitz, LG, ed. Infection Control in the Child Care Center and Preschool, 4th ed. Baltimore: Waverly, 1999: 135-139.
5. United States Department of Health and Human Services, Public Health Service, Food and Drug Administration, 2001 Food Code, Washington, DC 20204 http://www.cfsan.fda.gov/~dms/fc01-toc.html (11 April 2003)

6. Centers for Disease Control. *Escherichia coli* O157:H7 technical information December 2000. http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_t.htm (11 April 2003)

Other Sources of Information

1. Evans, AS and Brachman, PS, ed. Bacterial Infections of Humans Epidemiology and Control, 3rd Ed. New York: Plenum, 1998: 269-283
2. Missouri Department of Health, Bureau of Child Care, Licensing Rules for Group Child Care Homes and Child Care Centers, January 2002.

Web Sites

1. CDC *Escherichia coli* O157:H7 fact sheet http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_g.htm (11 April 2003)
2. CDC *Escherichia coli* O157:H7 technical information sheet. http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_t.htm (11 April 2003)
3. CDC *Escherichia coli* O157:H7 surveillance reports http://www.cdc.gov/ncidod/dbmd/diseaseinfo/escherichiacoli_a.htm (11 April 2003)

Hemolytic Uremic Syndrome (HUS), Postdiarrheal

Overview[1,2]

For a complete description of Hemolytic Uremic Syndrome, refer to the following texts:

- Control of Communicable Diseases Manual (CCDM) "Diarrhea caused by Enterohemorrhagic Strains" section and the "Shigellosis" section.
- 2000 Red Book, Report of the Committee on Infectious Diseases; *Escherichia coli* Diarrhea section.

Case Definition[3]

Clinical description

Hemolytic uremic syndrome (HUS) is characterized by the acute onset of microangiopathic hemolytic anemia, renal injury, and low platelet count. Thrombotic thrombocytopenic purpura (TTP) also is characterized by these features but can include central nervous system (CNS) involvement and fever and may have a more gradual onset. Most cases of HUS (but few cases of TTP) occur after an acute gastrointestinal illness (usually diarrheal).

Laboratory criteria for diagnosis

The following are both present at some time during the illness:

- Anemia (acute onset) with microangiopathic changes (i.e., schistocytes, burr cells, or helmet cells) on peripheral blood smear and

- Renal injury (acute onset) evidenced by either hematuria, proteinuria, or elevated creatinine level (i.e., ≥1.0 mg/dL in a child aged <13 years or ≥1.5 mg/dL in a person aged ≥13 years, or ≥50% increase over baseline)

Note: A low platelet count can usually, but not always, be detected early in the illness, but it may then become normal or even high. If a platelet count obtained within 7 days after onset of the acute gastrointestinal illness is not <150,000/mm^3, other diagnoses should be considered.

Case classification

Confirmed: An acute illness diagnosed as HUS or TTP that meets both the laboratory criteria and began within 3 weeks after onset of an episode of acute or bloody diarrhea.

Probable:

1. An acute illness diagnosed as HUS or TTP that meets the laboratory criteria in a patient who does not have a clear history of acute or bloody diarrhea in preceding 3 weeks **or**
2. An acute illness diagnosed as HUS or TTP, that
   a) Has onset within 3 weeks after onset of an acute or bloody diarrhea, **and**
   b) Meets the laboratory criteria except that microangiopathic changes are not confirmed.

Comment: Some investigators consider HUS and TTP to be part of a continuum of disease. Therefore, criteria for diagnosing TTP on the basis of CNS involvement and fever are not provided because cases diagnosed clinically as postdiarrheal TTP also should meet the criteria for HUS. These cases are reported as postdiarrheal HUS.

Information Needed for Investigation

Verify the diagnosis. What laboratory tests were conducted and what were the results? Was HUS confirmed?

When investigating gastrointestinal illness of unknown etiology, see the Outbreaks of Acute Gastroenteritis Section.

Establish the extent of illness. Determine if household or other close contacts are, or have been ill, by contacting the health care provider, patient or family member.

Contact the Regional Communicable Disease Coordinator if an outbreak is suspected, or if cases are in high-risk settings or jobs such as food handlers, child care, or health care.

Contact Bureau of Child Care if cases are associated with a child care facility.

Case/Contact Follow Up And Control Measures

Determine the source of infection:

- Does the case or a member of the case's household attend a child care center or nursery school?
- Does the case or a member of the case's household work as a food handler or healthcare provider?
- Identify symptomatic household and other close contacts and obtain stool specimens.

- Has the case traveled prior to onset of illness? *Shigella dysenteriae, Campylobacter jejuni* or other travelers' diarrhea can be associated with HUS.
- Have there been other cases linked by time, place or person?
- Does the case engage in sexual or other practices that would put them or others at increased risk?
- Patients with HUS should be cultured for enteric pathogens, including *E coli* O157:H7 (EHEC), *Shigella dysenteriae*, and *Campylobacter jejuni.* The absence of EHEC in feces does not preclude the diagnosis of EHEC-associated HUS, since HUS typically is diagnosed a week or more after onset of diarrhea when the organism may no longer be detectable in stool.

Control Measures

Specific control measures for HUS are not provided. However, if enteric cultures are positive, control measures for the specific organism causing the HUS should be followed.

- See the appropriate section of the Control of Communicable Diseases Manual (CCDM), "Control of patient, contacts and the immediate environment".
- See the appropriate Infections section of the Red Book.

Laboratory Procedures

Collect clinical specimens in Cary-Blair media using the Enteric Specimen collection kit supplied by the SPHL. Specimens should be shipped to the SPHL along with freeze pillows that have been frozen for at least 24 hours. The only clinical specimen the SPHL will test is a stool sample. The SPHL will identify *E. coli* O157:H7*, Shigella dysenteriae* and *Campylobacter jejuni* from cultures submitted by other laboratories. For epidemiological purposes, the cultured organism should be further characterized by the SPHL. The SPHL does this testing at no charge to the submitter.

Reporting Requirements

Hemolytic Uremic Syndrome, post diarrheal is a Category II disease and shall be reported to the local health authority or to the Missouri Department of Health and Senior Services within three (3) days of a suspected or confirmed diagnosis.

1. For confirmed and probable cases, complete a "Disease Case Report" (CD-1) and a "Hemolytic Uremic Syndrome Investigation Report".
2. Entry of the completed CD-1 into the MOHSIS database negates the need for the paper CD-1 to be forwarded to the Regional Health Office.
3. Send the completed secondary investigation form to the Regional Health Office.
4. All outbreaks or "suspected" outbreaks must be reported as soon as possible (by phone, fax, or e-mail) to the Regional Communicable Disease Coordinator. This can be accomplished by completing the Missouri Outbreak Surveillance Report (CD-51).

5. Within 90 days from the conclusion of an outbreak, submit the final outbreak report to the Regional Communicable Disease Coordinator.

References:

1. Chin, James, ed. "Diarrhea, *Escherichia coli*." Control of Communicable Diseases Manual, 17th ed. Washington, D.C.: APHA, 2000: 155-158, 451-455.
2. American Academy of Pediatrics. "*Escherichia coli* Diarrhea." In: Pickering LK, ed. 2000 Red Book: Report of the Committee on Infectious Diseases. 25th Ed. Elk Grove Village, IL. 2000: 108, 243-247.
3. Centers for Disease Control. Case Definitions for Infectious Conditions Under Public Health Surveillance. MMWR 1997;46 (RR-10):17 ftp://ftp.cdc.gov/pub/Publications/mmwr/rr/rr4610.pdf (11 April 2003)

Other Sources of Information

1. Mandell, Gerald L, Bennett, John E., and Dolin, Raphael, ed. Principles and Practice of Infectious Diseases. 5th Ed. New York: Churchill Livingstone, 2000: 1127, 1128, 1152.
2. Evans, AS and Brachman, PS, ed. Bacterial Infections of Humans Epidemiology and Control, 3rd ed. New York: Plenum, 1998: 269-270, 278-280.
3. Barnham, M., Weightman, N. Clostridium Septicum Infection and Hemolytic Uremic Syndrome, Emerging Infectious Diseases, Vol. 4 No. 2, April-June 1998 http://www.cdc.gov/ncidod/eid/vol4no2/barnham.htm (11 April 2003)

Web Sites

1. Mahon, B., Griffin, P., Mead, P., Tauxe, R. Hemolytic Uremic Syndrome Surveillance to Monitor Trends in Infection with *Escherichia coli* O157:H7 and Other Shiga Toxin-Producing *E. coli*. Letter, Emerging Infectious Diseases, Vol. 3, No. 3, July-September, 1997. http://www.cdc.gov/ncidod/EID/vol3no3/mahon.htm (11 April 2003)
2. Guth, B., de Souza, R., Vaz, T., and Irino, K.. First Shiga Toxin-Producing *Escherichia coli* Isolate from a Patient with Hemolytic Uremic Syndrome, Brazil. Letter, Emerging Infectious Diseases, Vol. 8, No. 5, May 2002. http://www.cdc.gov/ncidod/EID/vol8no5/01-0419.htm (11 April 2003)
3. Olsen, S., Miller, Gayle, Breuer, T., Kennedy, M., Higgins, C., Walford J., McKee, J., Fox, K., Bibb, W., and Mead, P. "A Waterborne Outbreak of *Escherichia coli* O157:H7 Infections and Hemolytic Uremic Syndrome: Implications for Rural Water Systems." Emerging Infectious Diseases, Vol. 8, No. 4, April, 2002. http://www.cdc.gov/ncidod/EID/vol8no4/00-0218.htm (11 April 2003)

E. coli O157:H7

FACT SHEET

What is *E. coli* O157:H7?

E. coli are bacteria that normally live in the intestines of humans and animals. Although most strains of *E. coli* are harmless, several are known to produce toxins that can cause illness. One particular *E. coli* strain called O157:H7 can cause severe diarrhea, kidney damage, and even death.

Who gets *E. coli* O157:H7 infection?

Anyone can become infected with *E. coli* O157:H7, but children and the elderly are more likely to develop serious complications.

How is *E. coli* O157:H7 spread?

The illness is acquired by ingesting food or water containing the bacteria. The bacteria can be found in the intestines of some cattle, and contamination of the meat may occur in the slaughtering process. Eating meat (especially ground) that is rare or inadequately cooked is a common way of getting the infection. Infection can occur by contaminating surfaces and utensils with raw meat and then preparing uncooked foods on those surfaces without washing them. Also vegetables, fruits, and unpasteurized fruit juices can be contaminated. Petting or handling infected animals without washing your hands immediately afterwards is another way this disease can be spread. Person-to-person transmission can occur if infected people do not wash their hands after using the toilet.

What are the symptoms of *E. coli* O157:H7 infection?

Most identified cases develop severe diarrhea and abdominal cramps. Blood is often seen in the stool. Fever may or may not be present. Some infected people may have mild diarrhea or no symptoms at all.

In some people, particularly children under five years of age, the infection causes a complication called hemolytic uremic syndrome (HUS). This is a serious disease in which the kidneys fail. Some people with HUS recover completely after medical treatment, but many have life long complications from this disease. HUS can be fatal.

How soon after the exposure do symptoms appear?

The symptoms usually appear about three days after exposure but may be as short as one day or as long as nine days.

How is *E. coli* O157:H7 infection treated?

Most people recover without treatment within 5 to 10 days. Persons with bloody diarrhea should consult a physician for treatment. Medications like Imodium or Lomotil should not be given to persons suspected of having *E coli* O157:H7 or persons with bloody diarrhea.

How can infection with *E. coli* O157:H7 be prevented?

- The single most important way to prevent the spread of disease is careful handwashing. Wash hands thoroughly:
  - After use of restroom.
  - Before preparation of foods.
  - After handling raw meat.
  - After completion of food preparation.
  - After handling animals or their feces.
- Thoroughly wash fruits and vegetables before consumption.
- Thoroughly cook all foodstuffs derived from animal sources, especially ground beef.
- Use only pasteurized milk, dairy products, and juices.
- Refrigerate foods promptly; don't hold at room temperature any longer than necessary.
- Wash cutting boards, utensils and food preparation counters with soap and water immediately after use.
- Use a meat thermometer to assure that the correct internal cooking temperature is reached. The correct temperature is 160°F for beef and pork, and 185°F for poultry.
- Prevent cross-contamination. Never let raw meat or meat juices come in contact with cooked meat or any other food, raw or cooked.

Missouri Department of Health and Senior Services
Section for Communicable Disease Prevention
Phone: (866) 628-9891 or (573) 751-6113

SAMPLE LETTER TO PARENTS OF CHILDREN EXPOSED TO *E. Coli* O157:H7

DATE

Parents of Children at
(Name)
Child Care Center

Dear Parent:

A child who attends the _____child care center has been diagnosed with *E. coli* O157:H7. The symptoms of this disease may include fever, severe abdominal pain and non-bloody diarrhea and may progress to grossly bloody diarrhea. *E. coli* O157:H7 is spread by eating or drinking contaminated food or water or by contact with infected people.

Children or members of your household who develop any of these symptoms should be seen by a physician immediately and tested for *E. coli* O157:H7 by having a stool specimen examination. Serious complications can result from this illness. Please do not send children to the center if they have diarrhea.

An information sheet on *E. coli* O157:H7 is enclosed. If you have questions please contact your physician or the _____County Health Department at [phone number].

Sincerely

MISSOURI DEPARTMENT OF HEALTH AND SENIOR SERVICES
SECTION OF COMMUNICABLE DISEASE CONTROL AND VETERINARY PUBLIC HEALTH

RECORD OF INVESTIGATION OF ENTERIC ILLNESS

MOHSIS CID#

Information with shaded titles is not required if entered on the CD-1 report or entered into MOHSIS.

NAME: (LAST, FIRST, MI)	DATE OF BIRTH: / /	AGE:	GENDER:	RACE:

PARENT(S) NAME IF NOT ADULT:	PHONE NO.:

HOME ADDRESS:	CITY:	STATE:	ZIP CODE:	COUNTY:

EMPLOYMENT / CHILD CARE (*See reverse side for High-Risk Employment information.)

PLACE OF EMPLOYMENT:	ADDRESS:	PHONE NO.:

OCCUPATION:	JOB DUTIES:

SCHOOL / CHILD CARE ATTENDED:	GRADE OR ROOM:

SCHOOL / CHILD CARE ADDRESS:	CITY:	STATE:	ZIP CODE:

Symptoms:* (Check Yes or No and number the order in which symptoms first presented)

ORDER NO.	SYMPTOM	YES	NO	ORDER NO.	SYMPTOM	YES	NO	ORDER NO.	SYMPTOM	YES	NO
	Nausea	☐	☐		Bloody Diarrhea	☐	☐		Malaise	☐	☐
	Vomiting	☐	☐		Cramps	☐	☐		Headache	☐	☐
	Diarrhea	☐	☐		Chills	☐	☐		Dizziness	☐	☐
	Watery Diarrhea	☐	☐		Fever_____°	☐	☐		Other		

Disease

DIAGNOSIS:	ONSET DATE / TIME:* / / _____ ☐ am ☐ pm	DURATION OF SYMPTOMS: _____ hrs.

INCUBATION PERIOD:*	PHYSICIAN CONSULTED? ☐ Yes ☐ No	DATE: / /	HOSPITALIZED? ☐ Yes ☐ No

PROVIDER NAME:	CITY:	STATE:	PHONE NO.:

TREATMENT: (TYPE, AMOUNT)	DATE:* / /

☐ Recovered ☐ Died	DATE OF DEATH: / /	CAUSE OF DEATH:

Patient History (Limit patient responses to within one disease incubation period.)

TRAVEL: (OUTSIDE OF HOME COMMUNITY) ☐ Yes ☐ No	DATE(S):*	LOCATION(S):

HOME WATER SUPPLY:

☐ Private (type)_____ ☐ Bottled Water (brand) _____

☐ Public Water District (Name)_____ Other water sources: _____

HOME SEWAGE DISPOSAL SYSTEM:

☐ Private (type)_____ ☐ Community System (Name) _____

RECREATIONAL WATER CONTACT: (SWIMMING POOL, LAKE, RIVER, ETC.)

☐ Yes ☐ No Type: _____ Location:_____ Dates:* _____

PET / ANIMAL EXPOSURE: (DOMESTIC PETS, LIVESTOCK, OTHER)

☐ Yes ☐ No Pets/Animals ill: ☐ Yes ☐ No Animal Type(s):_____ Date(s)* of Animal Exposure: _____

Describe Animal Exposure: _____

Location of Animal Exposure:_____

Comments:_____

Food**

	NAME	STREET ADDRESS	CITY / STATE
Grocery stores routinely used:			
Restaurants routinely used:			

OTHER FOOD SOURCES: (e.g., ETHNIC, UNPASTEURIZED, HOME CANNED)	TYPE / LOCATION:

* Epi Calendar (reverse side) may be used to help determine time periods.
** Attach separate 3-day food history if multiple cases are known/suspected.

Please submit this form along with completed CD-1 Report on all enteric cases.

Laboratory Tests*: Record Diagnostic Information in Section 41 of CD-1 Report and/or attach copy of lab slip(s)

Are there other associated cases? ☐ Yes ☐ No	If yes, how many?	How Associated:

List ill contacts:

NAME & ADDRESS	DOB / AGE	SEX	RELATION TO PATIENT	SIMILAR ILLNESS YES	SIMILAR ILLNESS NO	ONSET DATE	LAB CONFIRMED YES	LAB CONFIRMED NO	CD-1 AND ENTERIC FORM COMPLETED YES	CD-1 AND ENTERIC FORM COMPLETED NO
				☐	☐		☐	☐	☐	☐
				☐	☐		☐	☐	☐	☐
				☐	☐		☐	☐	☐	☐
				☐	☐		☐	☐	☐	☐

High Risk Employment Information (e.g., Food Handler, Child Care or Health Care Worker)

SPECIFIC JOB DUTIES:*

DATE(S) WORKED PRIOR TO ONSET OF ILLNESS:*	EXCLUDED FROM WORK? ☐ Yes ☐ No	DATE:* / /

IF YES, BY WHOM:	TITLE:

FOLLOW-UP SPECIMEN(S) REQUIRED? ☐ Yes ☐ No	DATE COLLECTED:* / /	RESULTS:* 1. _____ 2. _____ 3. _____

LAB:	WERE CONTROL MEASURES DISCUSSED WITH PATIENT? ☐ Yes ☐ No	BY:

RETURNED TO WORK? ☐ Yes ☐ No	DATE:* / /	EXPECTED DATE:* / /	EXCLUDED FROM HIGH-RISK DUTIES? ☐ Yes ☐ No

SEXUAL PREFERENCE: ☐ Heterosexual ☐ Homosexual ☐ Bisexual ☐ Unknown ☐ N/A	MULTIPLE PARTNERS? ☐ Yes ☐ No
RECREATIONAL DRUG USE: ☐ Yes ☐ No	DRUGS OF CHOICE:

*Epi Calendar:

MONTH(S) / DATES:	YEAR:	DISEASE:	WORK:

Sunday ____	Monday ____	Tuesday____	Wednesday____	Thursday ____	Friday ____	Saturday ____
Sunday ____	**Monday ____**	**Tuesday____**	**Wednesday____**	**Thursday ____**	**Friday ____**	**Saturday ____**
Sunday ____	**Monday ____**	**Tuesday____**	**Wednesday____**	**Thursday ____**	**Friday ____**	**Saturday ____**

OTHER PERTINENT EPIDEMIOLOGICAL DATA (TO INCLUDE PROBABLE SOURCE):

_____

_____

INVESTIGATOR:	DATE COMPLETED:

HUS Investigation Report

Name: _____
(last, first)

Address: _____

City: _____ Zip code _____

Date of Birth __/__/____ Sex: ☐ Male ☐ Female Phone _____

Race: ☐ American Indian or Alaska Native ☐ White
☐ Asian or Pacific Islander ☐ Other
☐ Black ☐ Unknown

Ethnicity: ☐ Hispanic ☐ Nonhispanic ☐ Unknown

1. Stool Specimen ☐ Yes ☐ No (If no, skip to question 3)
2. What organism was isolated _____.
3. Date of Illness onset: __/__/__ ☐ Unknown
4. Did the patient have: (please check one answer for each question)

	Yes	No	Unknown
Diarrhea	☐	☐	☐
Visible blood in stool	☐	☐	☐
Fever	☐	☐	☐
Abdominal cramps	☐	☐	☐

5. Was the patient admitted overnight to a hospital for this illness?
   ☐ Yes Name of hospital _____ ☐ No ☐ Unknown
6. Date of diagnosis of HUS (hemolytic anemia, low platelet count, kidney impairment): __/__/____
7. Did the patient undergo dialysis? ☐ Yes ☐ No ☐ Unknown
8. Did the patient have surgery? ☐ Yes ☐ No ☐ Unknown
9. Did the patient recover? ☐ Yes ☐ No, date of death __/__/____ ☐ Unknown

_____ _____ __/__/____
Person Completing Form Agency Date